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Indian Standard

SPECIFICATION FOR RONGEUR, DOUBLE-ACTION, OLIVECRONA'S PATTERN

1. Scope — Dimensional and other requirements for Olivecrona's pattern, double-action rongeur used in neurosurgery.

2. Material — Various components of the rongeur shall be made of the materials given below:

Component

Material

Conforming to

Jaws

Screws

Stainless steel

Designation 40Cr13 of IS: 6603-1972 'Specification for

stainless sleel bars and flats

Arms and springs

Stainless steel

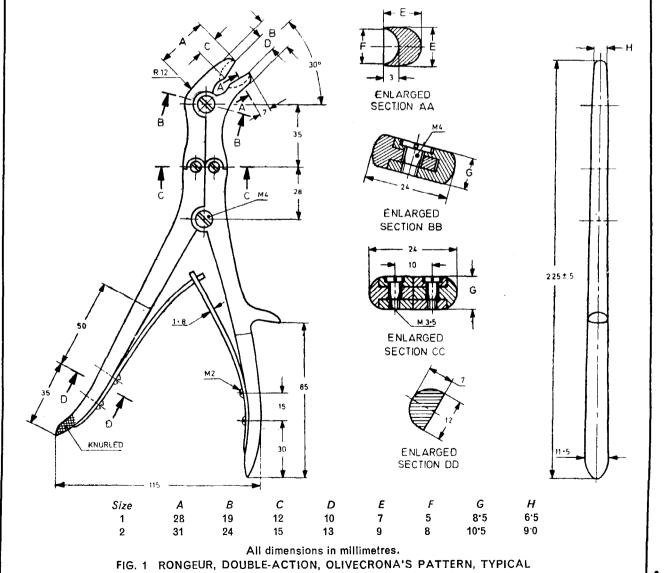
Stainless steel

Designation 30Cr13 of IS: 6603-1972 Designation 20Cr13 of IS: 6603-1972

3. Size, Shape and Dimensions

3.1 The rongeur shall be made in two sizes:

- a) Size 1 having 5 mm bite, and
- b) Size 2 having 8 mm bite.
- 3.2 Shape and dimensions shall be as shown in Fig. 1.



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3.3 A deviation of $\pm 2^{\circ}5$ percent shall be allowed on all dimensions.

4. Manufacture and Workmanship

- 4.1 The rongeur shall be of symmetrical and balanced construction.
- 4.2 The screws shall be well formed and shall have regular threads.
- 4.3 The joints shall have no undue play and shall work smoothly.
- 4.4 The spring action shall be smooth. It shall be neither too hard nor too slack.
- 4.5 The compound action shall be smooth and free from jerks.
- **4.6** The cutting edges shall be sharp, uniform and free from nicks. They shall match evenly when the jaws are closed.

5. Finish

- 5.1 The rongeur shall be free from surface defects like scales, burrs, pits, sharp edges, cracks, etc, on its internal as well as external surfaces.
- 5.2 The rongeur shall be polished bright and passivated.
- **6. Heat Treatment** Various components of the rongeur shall be suitably hardened and tempered to give a hardness of:
 - a) 510 to 595 HV for jaws,
 - b) 410 to 470 HV for arms and springs, and
 - c) 290 to 320 HV for screws.

7. Tests

- 7.1 Performance Test Cut a piece of skull bone or teakwood of 3 mm to 4 mm thickness five times with the instrument. Each time it shall nibble cleanly and with ease. On completion of the test, the cutting edges and the instrument as a whole shall not show any sign of damage.
- **7.2** Rigidity Test A compressive force of 1 100 N* shall be applied to the rongeur arms at a distance of 75 mm from free ends in such a manner that it tends to press the arms together. The maximum force shall be attained gradually and shall act for two minutes.

On completion of the test, the rongeur shall show no sign of damage.

7.3 Corrosion Resistance Test — The rongeur shall be subjected to boiling and autoclaving tests as prescribed in IS: 7531-1975 'Methods for boiling and autoclaving test for corrosion resistance of stainless steel surgical instruments'.

At the end of the test, no red stains or spots on the sample shall be allowed, but dulling of the polished surface may be permitted.

- 8. Marking The rongeur shall be suitably marked by etching or otherwise with the manufacturer's name, initials or registered trade-mark.
- 8.1 ISI Certification Marking Details available with the Indian Standards Institution.
- 9. Packing As agreed to between the purchaser and the supplier.

^{*1}kgf = 9.80665 Newton (N).